

# Installation Instructions for L971 Series Crankcase Level Switch



Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before mounting. It is your responsibility to have a qualified person install this unit and make sure it conforms to local codes.

## GENERAL INFORMATION

### WARNING

BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT

- ✓ Disconnect all electrical power to the machine.
- ✓ Make sure the machine cannot operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.
- ✓ Read and follow all installation instructions.



## Description

The Murphy L971 Series Level Switch detects low oil level in a compressor's crankcase. It is designed for Ingersoll-Rand Type 30, Type 40 and ESH compressors, yet can be adapted to fit other compressors that have an inspection plate extending below normal operating oil level. The L971 has a 1/2 NPT process connection and features an explosion-proof enclosure, durable SPDT snap-switch and rigid polyurethane foam float.

## Specifications

**Operating Temperature:** -15 to 275°F (-26 to 135°C).

**Maximum Working Pressure:** 30 psi (206 kPa) [2.06 bar].

**Switch Rating:** 4 A @ 250 VAC.

### Material

Case: *Aluminum (explosion-proof).*

Mounting Adaptor: *Brass.*

Floats:

- *Rigid polyurethane.*
- *304 stainless steel (L971-C only).*

Other Wetted Parts: *303, 304, and 316 stainless steel.*

O-Ring Seals: *Viton and Buna.*

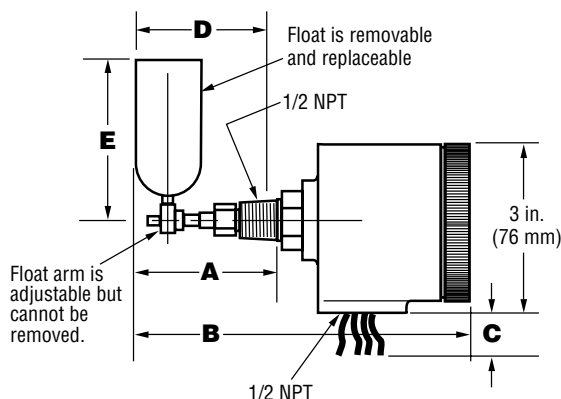
**Process Connection:** 1/2 NPT.

**Enclosure Rating:** UL and CSA listed for Class I, Groups C & D; Class II, Groups F & G, Hazardous Locations.

**Conduit Connection:** 1/2 NPT.

**Wire:** 18 AWG (0.75 mm<sup>2</sup>).

## Dimensions



Models	Dimensions in inches* (see drawing above)				
	A	B	C	D	E
L971	2-5/8 (67)	5-7/8 (149)	30 (762)	2-1/2 (64)	2-27/32 (72)
L971-A	2-5/8 (67)	5-7/8 (149)	30 (762)	2-1/2 (64)	2-27/32 (72)
L971-B	4-13/16 (122)	8-1/16 (205)	30 (762)	4-5/8 (117)	2-27/32 (72)
L971-C	2-13/16 (71)	6-1/16 (154)	30 (762)	2-7/8 (73)	3-1/8 (79)
L971-D	3-7/8 (98)	7-1/8 (181)	30 (762)	3-3/4 (95)	2-27/32 (72)
L971-E	4-13/16 (122)	8-1/16 (205)	30 (762)	5-1/8 (130)	2-27/32 (72)
L971-F	2-5/8 (67)	5-7/8 (149)	40 (1016)	2-1/2 (64)	2-27/32 (72)
L971-G	2-5/8 (67)	5-7/8 (149)	40 (1016)	2-1/2 (64)	2-27/32 (72)

\*Millimeter dimensions are shown in parenthesis ( ).

## Warranty

A limited warranty on materials and workmanship is given with this FW Murphy product. A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/support/warranty.htm](http://www.fwmurphy.com/support/warranty.htm)

## Compressors With Inspection Plate

1. Drain crankcase.
2. Remove crankcase inspection plate (Figure 1).
3. Drill and tap a 1/2 NPT female pipe thread into the inspection plate at point "A" (Figure 2). **CAUTION: Clean area of metal shavings.** The hole is to be a minimum of 2 in. (51 mm) below normal running oil level (Figure 3).

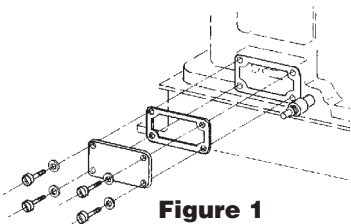


Figure 1

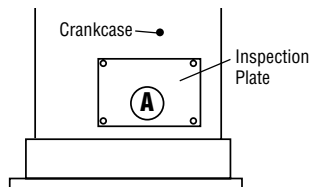


Figure 2

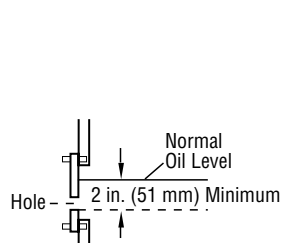


Figure 3

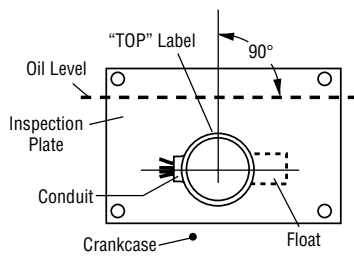


Figure 4

4. Unscrew and remove float on the L971 switch.
5. Apply pipe dope to the process connection threads.
6. Thread the L971 switch into crankcase hole until "TOP" label is up (Figure 4). Be sure the float moves freely and there are no obstructions.
7. If adjustment of shutdown level is required, loosen hex set screw on float attachment. Rotate float attachment to desired level. Retighten set screw.
8. Replace float and reinstall inspection plate and gasket in original position.
9. Install drain plug.
10. Wire accordingly.
11. Fill crankcase to proper level.

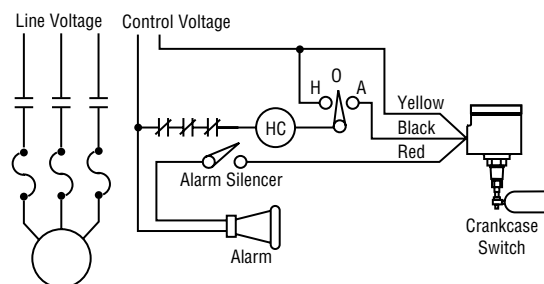
## Compressors Without Inspection Plate

1. If installing into a thick wall crankcase, drill and tap a 1/2 NPT female pipe thread into the crankcase. **CAUTION: Clean area of metal shavings.** The hole is to be a minimum of 2 in. (51 mm) below normal running oil level (Figure 3).

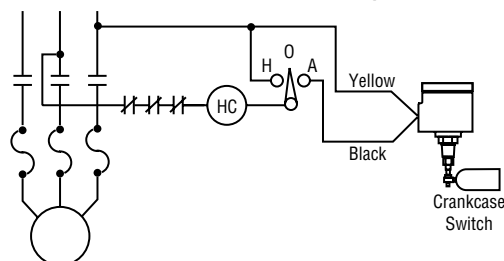
If installing into a thin wall crankcase, drill a hole in the crankcase slightly larger than outside diameter of a 1/2 in. coupling. The hole is to be a minimum of 2 in. (51 mm) below normal running oil level (Figure 3). **CAUTION: Clean area of metal shavings.** Weld a half collar (1/2 NPT) into the hole.

2. Follow steps 4 thru 11 above.

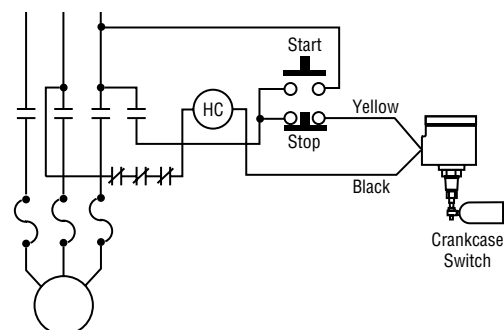
## Shutdown and Alarm Circuit



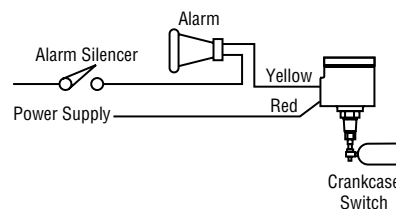
## Shutdown Circuit for H.O.A. Operation



## Shutdown Circuit for Start-Stop Push-button Operation



## Alarm Without Shutdown Circuit



# REPLACEMENT PARTS

Description	Part Number	Description	Part Number
Cover	15050443	Float	
Cover Gasket	15050369	Polyurethane	15050679
Snap-switch	00002326	Stainless Steel	15050356



**FW Murphy**  
P.O. Box 470248  
Tulsa, Oklahoma 74147 USA  
+1 918 317 4100  
fax +1 918 317 4266  
e-mail sales@fwmurphy.com  
www.fwmurphy.com

**CONTROL SYSTEMS & SERVICES DIVISION**  
P.O. Box 1819; Rosenberg, Texas 77471; USA  
+1 281 633 4500 fax +1 281 633 4588  
e-mail sales@fwmurphy.com

**MURPHY DE MEXICO, S.A. DE C.V.**  
Blvd. Antonio Rocha Cordero 300, Fracción del Aguaje  
San Luis Potosí, S.L.P.; México 78384  
+52 444 8206264 fax +52 444 8206336  
Villahermosa Office +52 993 3162117  
e-mail ventas@murphymex.com.mx  
www.murphymex.com.mx

**FRANK W. MURPHY, LTD.**  
Church Rd.; Laverstock, Salisbury SP1 1QZ; U.K.  
+44 1722 410055 fax +44 1722 410088  
e-mail sales@fwmurphy.co.uk  
www.fwmurphy.co.uk

**MURPHY SWITCH OF CALIFORNIA**  
41343 12th Street West  
Palmdale, California 93551-1442; USA  
+1 661 272 4700 fax +1 661 947 7570  
e-mail sales@murphyswitch.com  
www.murphyswitch.com

**MACQUARRIE CORPORATION**  
1620 Hume Highway  
Campbellfield, Vic 3061; Australia  
+61 3 9358 5555 fax +61 3 9358 5558  
e-mail murphy@macquarrie.com.au

